## AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions, and listings, of claims in the application:

### Listing of Claims

1. (Original) An opto-electronic method of converting an analog signal into a digital signal, comprising the steps of:

wavelength modulating a narrowband coherent electromagnetic beam such that the wavelength variation is a monotonic function of the amplitude of said analog signal;

transforming said wavelength modulated beam into a corresponding angularly modulated beam;

diffracting said angularly modulated beam into a bundle of diffracted beams; and

determining said digital signal by repeatedly sampling the spatial power distribution of said diffracted beams.

2. (Original) The method of claim 1, wherein said digital signal is determined in Gray coded form.

3. (Original) An opto-electronic apparatus for converting an analog signal into a digital signal, comprisng:

means for wavelength modulating a narrowband coherent electromagnetic beam by a monotonic function of the amplitude of said analog signal;

means for transforming said wavelength modulated beam into a corresponding angularly modulated beam;

means for diffracting said angularly modulated beam into a bundle of diffracted beams; and

means for determining said digital signal by repeatedly sampling the spatial power distribution of said diffracted beams.

4. (Original) Th apparatus of claim 3, wherein said wavelength modulating means include a tunable laser.

5. (Original) The apparatus of claim 3, wherein said transforming means include a grating.

6. (Original) The apparatus of claim 5, wherein said transforming means include an arrayed waveguide grating.

7. (Original) The apparatus of claims 3, wherein said diffracting means includes a set of diffracting elements.

8. (Original) The apparatus of claim 7, wherein said determining means includes a set of photo detectors.

9. (Original) The apparatus of claim 8, wherein said diffraction means includes 2.sup.n diffraction elements, where n is a positive integer representing the digital resolution of the apparatus.

10. (Original) The apparatus of claim 9, wherein said determining means includes n photo detectors.

11. (Original) The apparatus of claim 9, wherein said determining means includes 2n photo detectors for determining both said digital signal and its 2-complement.

12. (Original) The apparatus of claim 3, wherein the determining means determines said digital signal in Gray coded form.